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09/661,883	09/14/2000	Charles E. Schinner	10001935-1	9721

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EXAMINER	
JERABEK, KELLY L	
ART UNIT	**PAPER NUMBER**
2612	

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4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/661,883	Applicant(s) SCHINNER ET AL.	
	Examiner Kelly L. Jerabek	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 5/12/2004 have been fully considered but they are not persuasive.

Response to Remarks:

Applicant contends (Amendment, page 7) that the Parulski reference would not have suggested that the camera of Hata be modified so that the gain needed by the programmable amplifier to produce a live image at a constant frame rate under low lighting conditions be obtained from a stored lookup table. The Examiner respectfully disagrees. Hata discloses in figure 1 a digital camera including an image capture device (103) for converting light to an electrical signal (col. 3, lines 40-47). The camera includes an automatic exposure control operation for each mode that the camera operates in (col. 5, lines 65-67; col. 6, lines 1-5). Each mode has an exposure value diagram having a range of exposure times (figs. 4,5,6). The camera disclosed by Hata is capable of operating in a **monitoring mode (live view mode)** in which an image to be photographed is displayed in a display panel (122) (col. 6, lines 44-47). The camera includes a programmable amplifier (105) for automatically adjusting the strength of the electrical signal in order to output an optimum image signal (col. 6, lines 45-67).

Therefore, the programmable amplifier (105) is adjusted when it is determined that the image is obfuscated to lack discernible features in order to display an image with optimum brightness (col. 6, lines 62-67). These actions are performed in order to produce a live view image with optimum brightness under low lighting conditions (col. 6, lines 59-67). When an image to be taken is dark (low lighting) and the exposure value is less than 9, the gain of the variable amplifier is varied according to an exposure value (Ev) in order to display an image with optimum brightness and free of blur (col. 6, lines 62-67). Although Hata includes all of the limitations discussed above, he does not specifically state that the gains applied by the programmable amplifier (105) are supplied by a stored look up table.

Parulski discloses a digital camera including a programmable amplifier (16) . A microprocessor (28) sets the gain of the programmable amplifier (16) based on the light level reading and the lens focal length setting using a look up table (col. 2, lines 18-21 and 40-46) in order to provide a blur free image. Therefore, it would have been obvious to include the look up tables (1,2, and 3) as disclosed by Parulski in the digital camera disclosed by Hata. Doing so would provide a means for applying a gain to a programmable amplifier according to the shutter speed of the camera in order to provide a blur free image (Parulski: col. 1, lines 37-45).

Applicant contends (Amendment, page 7) that the Examiner's proposed modification of Hata in view of Parulski would not have had a reasonable expectation of success because the feedback control described in the Hata reference could not be

reliably replaced with the lookup table approach of Parulski. The Examiner respectfully disagrees. The automatic exposure (AE) control operation disclosed by Hata includes a CPU (121) that controls the gain of a VG amplifier (105) so that a photograph is displayed with optimum brightness (col. 5, lines 59-65; col. 6, lines 44-67). Figure 4 shows that the ISO sensitivity of the camera is determined in accordance with the gain level of the VG amplifier (105) and that these values relate to the shutter speed (col. 6, lines 49-58). Therefore, the gain of the VG amplifier (105) varies in accordance with shutter speed. The lookup table disclosed by Parulski relates the gain of a programmable amplifier (16) and a shutter speed (tables 1,2,3). Since the lookup table approach disclosed by Parulski and the automatic exposure control operation disclosed by Hata both relate the gain of a programmable amplifier to a shutter speed of a camera the modification of Hata in view of Parulski would have a reasonable expectation of success.

Applicant contends (Amendment, page 8) that even if the examiner's proposed modification of Hata in light of Parulski were made, the result would still not be the invention of amended claim 1. The Examiner respectfully disagrees. Hata discloses in figure 1 a digital camera including an image capture device (103) for converting light to an electrical signal (col. 3, lines 40-47). The camera includes an automatic exposure control operation for each mode that the camera operates in (col. 5, lines 65-67; col. 6, lines 1-5). Each mode has an exposure value diagram having a range of exposure times (figs. 4,5,6). The camera disclosed by Hata is capable of operating in a

monitoring mode (live view mode) in which an image to be photographed is displayed in a display panel (122) (col. 6, lines 44-47). The camera includes a programmable amplifier (105) for automatically adjusting the strength of the electrical signal in order to output an optimum image signal (col. 6, lines 45-67). Therefore, the programmable amplifier (105) is adjusted when it is determined that the image is obfuscated to lack discernible features in order to display an image with optimum brightness (col. 6, lines 62-67). These actions are performed in order to produce a live view image with optimum brightness under low lighting conditions (col. 6, lines 59-67). When an image to be taken is dark (low lighting) and the exposure value is less than 9, the gain of the variable amplifier is varied according to an exposure value (Ev) in order to display an image with optimum brightness and free of blur (col. 6, lines 62-67). Although Hata includes all of the limitations discussed above, he does not specifically state that the gains applied by the programmable amplifier (105) are supplied by a stored look up table.

Parulski discloses a digital camera including a programmable amplifier (16). A microprocessor (28) sets the gain of the programmable amplifier (16) based on the light level reading and the lens focal length setting using a look up table (col. 2, lines 18-21 and 40-46) in order to provide a blur free image. Therefore, it would have been obvious to include the look up tables (1,2, and 3) as disclosed by Parulski in the digital camera disclosed by Hata. Doing so would provide a means for applying a gain to a programmable amplifier according to the shutter speed of the camera in order to provide a blur free image (Parulski: col. 1, lines 37-45).

Applicant contends (Amendment, page 8) that the Fellegara reference does not deal with a digital still camera having a live view mode. The Examiner agrees with this statement. However, the examiner never alleges that Fellegara does deal with a digital still camera having a live view mode. Furthermore, applicant's amended claim 7 does not mention a camera having a live view mode.

Applicant contends (Amendment, page 8) that Fellegara does not suggest that the camera of Hata be modified so that a buffered image is repeatedly refreshed at a given frame rate independent of LCD brightness and contrast control. The Examiner respectfully disagrees. Hata discloses in figure 1 a digital camera including an image capture device (103) for converting light to an electrical signal (col. 3, lines 40-47). The camera includes an automatic exposure control operation for each mode that the camera operates in (col. 5, lines 65-67; col. 6, lines 1-5). Each mode has an exposure value diagram having a range of exposure times (figs. 4,5,6). The camera disclosed by Hata is capable of operating in a monitoring mode (live view mode) in which an image to be photographed (buffered image) is displayed in a display panel (122) (col. 6, lines 44-47). The camera includes a programmable amplifier (105) for automatically adjusting the strength of the electrical signal in order to output an optimum image signal (col. 6, lines 45-67). Therefore, the programmable amplifier (105) is adjusted when it is determined that the image is obfuscated to lack discernible features in order to display an image with optimum brightness (col. 6, lines 62-67). These actions are performed in order to produce a live view image with optimum brightness under low lighting

conditions (col. 6, lines 59-67). When an image to be taken is dark (low lighting) and the exposure value is less than 9, the gain of the variable amplifier is varied according to an exposure value (Ev) in order to display an image with optimum brightness and free of blur (col. 6, lines 62-67). Although Hata includes all of the limitations discussed above, he does not go into the details of how the live view image in the monitoring mode is displayed. Specifically, Hata fails to specifically state that the displayed image is repeatedly refreshed at a given frame rate independently of LCD brightness and contrast controls.

Fellegara discloses a digital camera with quick review of last captured image (fig. 6). The main display screen unit (36) of the camera is continuously refreshed by frame rate signals provided by the ASIC (122) and the microcontroller (page 5, paragraph 44). Fellegara makes no mention of LCD brightness or contrast controls being associated with the frame rate, thus this refreshment is independent of the LCD brightness and contrast controls. Therefore, it would have been obvious to include the ASIC (122) and microcontroller as disclosed by Fellegara in the digital camera disclosed by Hata. Doing so would provide a means for activating a display screen for a period of time in order to display an image (Fellegara: page 2, paragraph 8).

Applicant contends (Amendment, page 8) that there is nothing in Fellegara to suggest any reasonable expectation of success in modifying the Hata camera to repeatedly refresh the displayed image at a given frame rate independent of LCD brightness and contrast controls. The Examiner respectfully disagrees. The Hata

reference discloses a camera capable of displaying an image in a live view mode (monitoring mode) (col. 6, lines 44-67). However, Hata does not go into the details of how the live view image in the monitoring mode is displayed. Specifically, Hata fails to specifically state that the displayed image is repeatedly refreshed at a given frame rate independently of LCD brightness and contrast controls.

Fellegara discloses a digital camera with quick review of last captured image (fig. 6). The main display screen unit (36) of the camera is continuously refreshed by frame rate signals provided by the ASIC (122) and the microcontroller (page 5, paragraph 44). Fellegara makes no mention of LCD brightness or contrast controls being associated with the frame rate, thus this refreshment is independent of the LCD brightness and contrast controls. Therefore, it would have been obvious to include the ASIC (122) and microcontroller as disclosed by Fellegara in the digital camera disclosed by Hata. Doing so would provide a means for activating a display screen for a period of time in order to display an image (Fellegara: page 2, paragraph 8).

Applicant contends (Amendment, pages 8-9) even if the camera of Hata were modified in view of Fellegara the would not be a camera that avoids obfuscated images by automatically adjusting the strength of the electrical signal from an image capture device **at the same time** repeatedly refreshing the displayed image at a given frame rat independently of LCD brightness and contrast controls. The Examiner respectfully disagrees. First of all, the applicant's amended claim 7 does not state "**at the same time** repeatedly refreshing...". Furthermore, Hata in view of Fellegara includes all of the

limitations of claim 7 as amended. Hata discloses in figure 1 a digital camera including an image capture device (103) for converting light to an electrical signal (col. 3, lines 40-47). The camera includes an automatic exposure control operation for each mode that the camera operates in (col. 5, lines 65-67; col. 6, lines 1-5). Each mode has an exposure value diagram having a range of exposure times (figs. 4,5,6). The camera disclosed by Hata is capable of operating in a monitoring mode (live view mode) in which an image to be photographed (buffered image) is displayed in a display panel (122) (col. 6, lines 44-47). The camera includes a programmable amplifier (105) for automatically adjusting the strength of the electrical signal in order to output an optimum image signal (col. 6, lines 45-67). Therefore, the programmable amplifier (105) is adjusted when it is determined that the image is obfuscated to lack discernible features in order to display an image with optimum brightness (col. 6, lines 62-67). These actions are performed in order to produce a live view image with optimum brightness under low lighting conditions (col. 6, lines 59-67). When an image to be taken is dark (low lighting) and the exposure value is less than 9, the gain of the variable amplifier is varied according to an exposure value (Ev) in order to display an image with optimum brightness and free of blur (col. 6, lines 62-67). Although Hata includes all of the limitations discussed above, he does not go into the details of how the live view image in the monitoring mode is displayed. Specifically, Hata fails to specifically state that the displayed image is repeatedly refreshed at a given frame rate independently of LCD brightness and contrast controls.

Fellegara discloses a digital camera with quick review of last captured image (fig. 6). The main display screen unit (36) of the camera is continuously refreshed by frame rate signals provided by the ASIC (122) and the microcontroller (page 5, paragraph 44). Fellegara makes no mention of LCD brightness or contrast controls being associated with the frame rate, thus this refreshment is independent of the LCD brightness and contrast controls. Therefore, it would have been obvious to include the ASIC (122) and microcontroller as disclosed by Fellegara in the digital camera disclosed by Hata. Doing so would provide a means for activating a display screen for a period of time in order to display an image (Fellegara: page 2, paragraph 8).

Claim Objections

Claim 12 objected to because of the following informalities: "fubbered image" should read "buffered image". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Hata US 6,603,508 in view of Parulski et al. US 5,610,654.

Re claim 1, Hata discloses in figure 1 a digital camera including an image capture device (103) for converting light to an electrical signal (col. 3, lines 40-47). The camera includes an automatic exposure control operation for each mode that the camera operates in (col. 5, lines 65-67; col. 6, lines 1-5). Each mode has an exposure value diagram having a range of exposure times (figs. 4,5,6). The camera disclosed by Hata is capable of operating in a monitoring mode (live view mode) in which an image to be photographed is displayed in a display panel (122) (col. 6, lines 44-47). The camera includes a programmable amplifier (105) for automatically adjusting the strength of the electrical signal in order to output an optimum image signal (col. 6, lines 45-67). Therefore, the programmable amplifier (105) is adjusted when it is determined that the image is obfuscated to lack discernible features in order to display an image with optimum brightness (col. 6, lines 62-67). These actions are performed in order to produce a live view image with optimum brightness under low lighting conditions (col. 6, lines 59-67). When an image to be taken is dark (low lighting) and the exposure value is less than 9, the gain of the variable amplifier is varied according to an exposure value (Ev) in order to display an image with optimum brightness and free of blur (col. 6, lines 62-67). Although Hata includes all of the limitations discussed above, he does not specifically state that the gains applied by the programmable amplifier (105) are supplied by a stored look up table.

Parulski discloses a digital camera including a programmable amplifier (16) . A microprocessor (28) sets the gain of the programmable amplifier (16) based on the light level reading and the lens focal length setting using a look up table (col. 2, lines 18-21 and 40-46) in order to provide a blur free image. Therefore, it would have been obvious to include the look up tables (1,2, and 3) as disclosed by Parulski in the digital camera disclosed by Hata. Doing so would provide a means for applying a gain to a programmable amplifier according to the shutter speed of the camera in order to provide a blur free image (Parulski: col. 1, lines 37-45).

Re claim 2, the programmable amplifier (105) also adjusts the strength of the electrical signal when the buffered image is blurred (col. 8, lines 1-7).

Re claim 3, the digital camera disclosed by Hata includes an image pre-processor (107) for further increasing the strength of the electrical signal (col. 5, lines 1-13). The camera is capable of displaying an image in the display panel (122) in a "live view" mode (col. 6, lines 44-47).

Re claim 4, the digital camera includes an analog to digital converter (106), and a digital gain control module (1075) that serves as a digital multiplier for increasing the strength of the digital signal (col. 5, lines 1-6).

Re claim 5, the digital gain control module (1075) adjusts the digital signal level of the R, G, and B data, therefore the digital multiplier means is a digital multiplier (col. 5, lines 4-6),

Re claim 6, CPU (121) is a microprocessor that sets the gain applied to the digital gain control module (1075), therefore the digital multiplier means is also a microprocessor (col. 5, lines 4-6).

Re claim 14, the CPU (121) controls a photographing operation, an automatic exposure control operation, an automatic white balancing operation, and an automatic focusing operation in accordance with a series of program codes (col. 4, lines 13-26). In doing this, the CPU (121) calculates the gain needed by the programmable amplifier (105) (col. 3, lines 48-62). These actions are performed in order to produce a live view image with optimum brightness under low lighting conditions (col. 6, lines 59-67).

Claims 7-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Hata US 6,603,508 in view of Fellegara et al. US 2001/0015760.

Re claim 7, Hata discloses in figure 1 a digital camera including an image capture device (103) for converting light to an electrical signal (col. 3, lines 40-47). The camera includes an automatic exposure control operation for each mode that the camera operates in (col. 5, lines 65-67; col. 6, lines 1-5). Each mode has an exposure

value diagram having a range of exposure times (figs. 4,5,6). The camera disclosed by Hata is capable of operating in a monitoring mode (live view mode) in which an image to be photographed (buffered image) is displayed in a display panel (122) (col. 6, lines 44-47). The camera includes a programmable amplifier (105) for automatically adjusting the strength of the electrical signal in order to output an optimum image signal (col. 6, lines 45-67). Therefore, the programmable amplifier (105) is adjusted when it is determined that the image is obfuscated to lack discernible features in order to display an image with optimum brightness (col. 6, lines 62-67). These actions are performed in order to produce a live view image with optimum brightness under low lighting conditions (col. 6, lines 59-67). When an image to be taken is dark (low lighting) and the exposure value is less than 9, the gain of the variable amplifier is varied according to an exposure value (Ev) in order to display an image with optimum brightness and free of blur (col. 6, lines 62-67). Although Hata includes all of the limitations discussed above, he does not go into the details of how the live view image in the monitoring mode is displayed. Specifically, Hata fails to specifically state that the displayed image is repeatedly refreshed at a given frame rate independently of LCD brightness and contrast controls.

Fellegara discloses a digital camera with quick review of last captured image (fig. 6). The main display screen unit (36) of the camera is continuously refreshed by frame rate signals provided by the ASIC (122) and the microcontroller (page 5, paragraph 44). Fellegara makes no mention of LCD brightness or contrast controls being associated with the frame rate, thus this refreshment is independent of the LCD brightness and

contrast controls. Therefore, it would have been obvious to include the ASIC (122) and microcontroller as disclosed by Fellegara in the digital camera disclosed by Hata. Doing so would provide a means for activating a display screen for a period of time in order to display an image (Fellegara: page 2, paragraph 8).

Re claim 8, when the blur avoiding photographing mode of the digital camera is selected the gain of the programmable amplifier (105) is increased in incremental step values (col. 9, lines 17-26).

Re claim 9, the CPU (121) automatically increases the gain of the programmable amplifier (105) until the amplitude of the signals representing the image is increased to a predetermined level for an optimum exposure, thus increasing the gain stops when the strength of the signal reaches the predetermined level (col. 10, lines 1-7).

Re claim 10, the predetermined level for optimum exposure can be set according to the quality desired by the user, therefore a Gmax level can be set corresponding to the selected gain (col. 10, lines 41-50).

Re claim 11, when the inverse-triangle button is pressed the gain level may be lowered, therefore the strength may be decreased in incremental step values to a minimum strength value if a lower gain level is selected (col. 9, lines 24-26). As shown in figure 3, the gain drops below 0 when the control voltage drops below 0.25 V.

Re claim 12, the predetermined level for optimum exposure can be set according to the quality desired by the user, therefore a Gmin level can be set corresponding to the selected gain (col. 10, lines 41-50). As shown in figure 3, the gain drops below 0 when the control voltage drops below 0.25 V.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is 703-305-8659. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at 703-746-3059.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ

TUAN HO
PRIMARY EXAMINER